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ABSTRACT

The project studied videotaped unstructured play sessions between 16 Downs Syndrome (DS) infants (aged 6 months and 12 months) and their mothers, to investigate the relationship between maternal attention-directing strategies and the infants' response to toys. A comparison group consisted of 16 high-risk premature infants matched by mental and motor age. At 6 months, the DS infants spent more time fixating on their mothers' faces than on toys. The premature infants showed a greater ability to examine more toys with their mothers' help than alone, while the DS infants did not. The study concluded that, to increase DS infants' manipulation of toys, mothers should place toys in the infants' hands rather than just demonstrate, and should maintain the infants' attention to a toy rather than redirect their attention. (Author/JDD)

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MATERNAL ATTENTION DIRECTING STRATEGIES AND INFANTS' RESPONSE TO TOYS: EFFECTS OF DOWNS SYNDROME AND PREMATURITY.

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ABSTRACT

The primary objective of the present study was to investigate the relationship between maternal attention-directing strategies and Downs Syndrome (DS) infants' response to toys, using a sample of 6 and 12-month DS infants (n=16) and their mothers. A mental and motor age matched high risk (HR) premature group was included as a comparison group (n=16). Maternal behaviors and infant responses were coded from videotaped unstructured play sessions. At 6 and 12 months the decreased responsiveness reported for DS infants was expected to result in less time attending to and manipulating toys. Mothers of HR preterms were expected to be more successful in facilitating their infants attention to toys. At 12 months, we hypothesized that mothers who put less strain on their infants' attentional capacity by maintaining rather than redirecting their infants' attention would elicit higher level infant responses. Verbal and nonverbal techniques that provide more structure were expected to produce higher level responses. The relationship between these particular techniques and infant responses was expected to be greater for the DS infants.

Results showed that at both timepoints DS infants did spend less time attending to and manipulating toys. Mothers of the two groups used some different attention directing strategies. Particular strategies were differentially effective with the two groups of infants. These results have implications for improving toy centered interactions between DS infants and their mothers.

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Maternal Attention Directing Strategies and Infants' Response to Toys:

Effects of Downs Syndrome and Prematurity.

A number of studies have demonstrated a relationship between the quality of interactions between mothers and infants and developmental outcome. Downs Syndrome (DS), a condition associated with later cognitive and social deficiencies, has been frequently reported to have a disruptive effect on early mother-infant interactions. At the present time, however, there is no information about the effect of specific maternal attention-directing techniques in play interactions on the ability of DS infants to respond. Behaviors that are peculiar to mothers of DS infants may impede the infant's ability to respond. On the other hand, these mothers may be using strategies that are particularly effective with DS infants.

The primary objective of the present study was to investigate the relationship between maternal attention-directing strategies and Down Syndrome infants' response to toys at two timepoints (6 and 12 months). The DS infants were all trisomy-21 and did not have sensory impairments or significant medical problems. A group of high risk (HR) preterm infants was included as a comparion group since an earlier study showed these infants to have different interaction patterns with their mothers compared to low risk preterms and full-term infants. The HR preterm group included infants who had more serious complications, bronchopulmonary dysplasia and/or severe intraventricular hemorrhage, associated with their early births. At 6 months, the two groups of infants were of comparable mental and motor age. At 12 months they were of comparable motor age while mental age was slightly higher for the HR preterms. Levels of education was comparable for the two groups of mothers. Infants and mothers were videotaped at both time periods in an unstructured toy centered play session. Tapes were coded from

mother's behaviors related to her attention directing strategy and for the infant's response. At 6 months, mothers completed the Paretal Attitude Towards Childrearig Questionnaire (Eastrbrooks, 1982).

Hypotheses

(1) At 6 months, we hypothesized that the DS infants because of their reported decreased responsiveness would have more difficulty attending to and manipulating toys in interactions with their mothers and (2) that the mothers of the HR preterms would be more effective in facilitating their infants attention to toys. (3) At 12 months, we hypothesized that mothers who put less strain on their infants' attentional capacity by attempting to maintain rather than redirect their infants' attention would elicit higher level infant responses (i.e. manipulating the intended object as opposed to just looking and holding or not responding at all) and (4) Verbal techniques that provide more structure (i.e. imperatives as opposed to questions or attention verbs) were expected to produce higher level responses. (5) Also, higher level responses were expected to more often follow nonverbal techniques that provide more structure (i.e. demonstrations as opposed to gives or attention directing gestures). (6) In addition, we hypothesized that the relationship between these particular techniques and infant response would vary across the two infant groups, being greater for the DS infant.

6 Months. The six month DS interactions were characterized by infants who spent more time focused on their mothers faces, had fewer shifts of attention to different toys, and spent less time focusing on and examiing toys. The HR preterms examined more different toys when interacting with their mothers as compared to alone, while the DS infants did not show differences on this measure across the two conditions ($F(1,27) = 4.63$, $p < .04$; risk x conditon interaction). Although there were no statistically

significant differences between the styles of the mothers of the DS and the preterms, there was a trend ($p<.06$) for the mothers of the DS infants to physically orient their infants attention to toys (moving their hand, adjusting their position) less often and to spend less time focused on the toys in the interactions. Regression analysis revealed that the maternal characteristics that were equally effective for the two groups of mothers in focusing their infants attention to toys were the amount of time spent jointly attending to toys with their infants and following infants' focus of attention (accounting for 35% of the variance) and attitudes of warmth (accounting for an additional 24% of the variance).

12 Months. Profile analyses revealed that for the mothers of the DS infants a greater proportion of their interactions were spent introducing toys because their infants were not already interested in toys, and physically orienting their infants attention to toys. They also handed toys to their infants less often. The mothers of the two groups were similar in their use of verbal techniques and the time spent maintaining rather than changing their infants focus of attention. The two infant groups were similar in that they usually responded to their mothers attention directing strategies. They differed in that the HR preterms more often manipulated the toys whereas the DS infants more often just looked or passively held the toys. Relationships between strategies and response level did vary across the two groups. Mothers attempts to maintain attention as well as their use of questions, imperatives, attention verbs (look, watch), and demonstrations of toys, and physically orienting their infants' attention more often produced manipulations for HR preterms while only producing more looks for DS infants. Introducing a toy when the infant was not already attending to a toy produced more looks than manipulations for both groups. Giving a toy to the infant was equally effective for both groups in producing more

manipulations than looks or no response. Mothers attempts to shift their infants attention produced more no responses for DS infants than looks or manipulates while they did not affect the way HR infants responded.

Summary

Our findings have implications for the facilitation of successful joint attention interactions between DS infants and their mothers. At 6 months, the DS infants spend a greater proportion of time fixating on their mothers' faces than on toys. Also, the HR preterm infants show a greater ability to examine more different toys with their mothers than alone. The DS infants did not show increased examination of toys with their mothers. At this timepoint DS and HR infants attention to toys is facilitated by mothers who spend more time jointly attending to toys with their infants and who express more warmth about their infants. At 12 months, the DS infants continue to manipulate toys less and spend their time merely looking or passively holding toys. At this timepoint, the two groups did differ in their responses to particular maternal attention directing techniques. To increase DS infants manipulation of toys, it is necessary for mothers to place toys in the infants' hands rather than just showing or demonstrating. Since attempts to shift attention from one toy to another has negative consequences, mothers of these DS infants would be advised to spend more time maintaining attention to a toy the infants are already attending to or to introduce toys when they are not attending.